

Gene M. Yogodzinski

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Born January 6, 1957, Teaneck, New Jersey
Married, 2 children
Home Address:
617 Hampton Trace Lane
Columbia, South Carolina, 29209-1937
(803) 233-8117

1993 Ph.D. Cornell University, Ithaca, New York
Dissertation: Processes and Components Contributing to the Formation of Island Arc
Volcanic Rocks: Evidence from the Western Aleutians
Advisor: Robert W. Kay

1985 M.S. Oregon State University, Corvallis, Oregon
Thesis: The Deschutes Formation - High Cascade Transition in the Whitewater River
Area, Jefferson County, Oregon
Advisor: Edward M. Taylor

1979 B.S. The University of Maine, Orono, Maine

ACADEMIC EXPERIENCE & POSITIONS HELD

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|----------------|--|
| 2007 – present | Associate Professor of Earth & Ocean Sciences, University of South Carolina |
| 2008 – 2010 | Associate Chair, Department of Earth & Ocean Sciences, University of South Carolina |
| 2006 – 2008 | Undergraduate Program Director, Department of Earth & Ocean Sciences, University of South Carolina |
| 2001 – 2006 | Assistant Professor, University of South Carolina, Columbia, SC |
| 2001 | Associate Professor, Dickinson College, Carlisle, PA |
| 1995 – 2000 | Assistant Professor, Dickinson College, Carlisle, PA |
| 1993 – 1994 | Research Associate, University of Nevada, Las Vegas, NV |
| 1993 | Visiting Lecturer, Hamilton College, Clinton, NY |
| 1987 – 1992 | Graduate Research and Teaching Assistant, Cornell University |
| 1983 | Exploration Geologist, St. Joe American, Spokane, WA |
| 1981 | Exploration Geologist, Utah International, Reno, NV |
| 1980 | Exploration Geologist, J.S. Cummings Inc., Bangor, ME |

PROFESSIONAL AFFILIATIONS

Geochemical Society
American Geophysical Union
Geological Society of America
Mineralogical Society of America

RESEARCH FOCUS

Genesis and evolution of subduction-related magmas
Relationships between magmatism and tectonics
Crust-mantle evolution
Field geology, especially in areas of active volcanism

TEACHING FOCUS

Mineralogy, Petrology, Geochemistry
Isotope & Trace Element Geochemistry
Igneous Processes & Crustal Genesis
Field Geology
Introductory Geology

FIELD EXPERIENCE & CRUISE PARTICIPATION

2016 Shipboard Scientist, R/V Sonne SO249/2, Komandorsky Islands – Bering Sea
2016 Shipboard Scientist, R/V Sonne SO249/1, North Pacific – Aleutians, AK
2015 Geological Field Work, Unalaska, Atka and Umnak Islands, Aleutians, AK
2014 Geological Field Work, Ecuador, Sangay Volcano
2014 IODP Expedition 351 Core Description Team
2010 Geological Field Work, Ecuador, Sumaco and Reventador volcanoes
2009 Shipboard Scientist, R/V Sonne KALMAR 201-2, Bering Sea - Aleutians
2009 Shipboard Scientist, R/V Sonne, KALMAR 201-1b, NW Pacific - Aleutians
2005 Chief Scientist, TN182 Western Aleutian Volcano Expedition, R/V Thompson
2004 Co-Chief Scientist, Jason II and R/V Reville, NOAA-NURP Aleutian Cruise
2004 Geological Fieldwork, Atka Island, Aleutians, Alaska
2003 Geological Fieldwork, Shiveluch and Kharchinsky volcanoes, Kamchatka
2002 Geological Fieldwork, Atka Island, Aleutians, Alaska
2001 Geological Fieldwork, Atka Island, Aleutians, Alaska
1998 Geological Fieldwork, Shiveluch Volcano, northern Kamchatka
1993 Geologic Mapping, Reveille Range, Nye County, Nevada
1992 Geological Fieldwork, Avachinsky Volcano, eastern Kamchatka
1990 Shipboard Scientist, Leg 38, Soviet R/V Vulkanolog, Aleutians
1989 Shipboard Scientist, Leg 35, Soviet R/V Vulkanolog, Aleutians – Bering Sea
1988 Geological Fieldwork, Attu Island, Aleutian Islands, Alaska
1987 Geological Fieldwork, Adak and Attu islands, Aleutian Islands, Alaska
1984 Geologic Mapping, Mt Jefferson area, Central Oregon
1983 Mineral Exploration, Central Washington
1982 Geologic Mapping, Mt Jefferson area, Central Oregon
1981 Mineral Exploration, Northeastern Nevada
1980 Mineral Exploration, Northern Maine

INVITED & KEYNOTE TALKS

National GSA Invited Talk, Denver, CO – September 2016
Cornell University Department of Earth & Atmospheric Sciences – February 2016
Hamilton College Department of Geology – February 2016
Fall AGU Invited Talk, San Francisco, CA – December 2015
GeoPRISMS TEI Student Symposium, Redondo Beach, CA – September 2015
University of Alaska Department of Geosciences, AK – November 2013
USGS / Alaska Volcano Observatory, Anchorage, AK – November 2013
University of Wyoming Department of Geology & Geophysics – September 2012
Lamont-Doherty Earth Observatory, Palisades, NY – March 2012
Fall AGU Invited Talk, San Francisco, CA – December 2011
GEOPRISMS Alaska Planning Workshop Student Symposium – September 2011
KALMAR Workshop, Trier, Germany – May 2011
University of Nevada, Las Vegas Department of Geoscience – September 2010
Georgia Southern University, Statesboro, GA – April 2009
University of Florida Department of Geological Sciences – March 2009
Goldschmidt Conference Keynote Talk, Vancouver, BC – July 2008
University of Georgia Department of Geology – October 2006
University of South Florida School of Geosciences – April 2006
USGS Alaska Volcano Observatory, Anchorage, AK – February 2005
Washington State University Dept. of Earth & Environmental Sciences – January 2005
University of South Carolina, Aiken Department of Geology – February 2004
University of Münster Institute for Mineralogy, Münster, Germany – June 2003
USGS Alaska Volcano Observatory, Anchorage, AK – November 2002
University of North Carolina Department of Geological Sciences – October 2001
Colgate University Department of Geology – March 1997
Dickinson College Department of Geology – March 1994
SUNY Plattsburg Department of Geology – May 1993
University of Rochester Department of Earth & Environmental Sciences – March 1993
Hamilton College Department of Geology – February 1992

GRADUATE & POSTDOCTORAL RESEARCH ADVISING

Max Siegrist, PhD – in progress (chair)
Owen Jensen (Univ. of South Carolina Presidential Fellow) PhD – in progress (chair)
Ryan Waldman, (Univ. of South Carolina Presidential Fellow) PhD – in progress (chair)
Paul Béguelin, PhD – in progress (committee)
Lisa Kant, PhD – in progress (committee – University of Wyoming)
Saad Alarifi, MS – 2017 (committee)
Carl Frisby, PhD – 2016 (committee)
Ben Hocking, MS – 2016 (chair)
Jessica Holm, MS – 2016 (committee)
Max Siegrist, MS – 2013 (chair)

Reid Mobley, MS – 2012 (chair)
Tyler Izykowski, MS – 2012 (committee)
Tarun Khanna, Postdoctoral – 2011 (co-adviser)
Shawn Arndt, MS – 2011 (chair)
Shawn Wallace, MS – 2011 (committee)
Josh Turka, MS – 2010 (chair)
Mel Fillerup, PhD – 2010 (committee)
Zahid Khandaker, PhD – 2010 (committee)
Nickles Badger, MS – 2009 (committee)
Jessica Mason, MS – 2009 (committee)
David Gomboshi, MS – 2008 (committee)
Jason Bryant, PhD – 2008 (chair)
Shaun Brown, MS – 2006 (chair)
Christine Dektor, MS – 2006 (chair)
Megan Gerseny, MS – 2005 (committee – Washington State University)
Jason Meyer, MS – 2005 (committee)

NATIONAL SERVICE

IEDA Science Community Committee, 2017 -
GeoPRISMS Science Oversight Committee, 2013-2016
Co-Convener, GeoPRISMS Theoretical & Applied Institute, Redondo, CA, Sep. 2015
AGU Fall Meeting Session Organizer and Co-Convener, December 2013
Co-Convener, GeoPRISMS Alaska Planning Workshop, Portland, Oregon, Sep. 2011
NSF Proposal Review Panel - MG&G, November 2010
Goldschmidt Conference Session Organizer, June 2005
Western Pacific Geophysics Meeting Session Organizer, June 2000

RESEARCH GRANTS

Thirteen awards since 1996, principle investigator awards only, mostly from the U.S. National Science Foundation (NSF)

NSF – GeoPRISMS Program (May 2016), *Building an International Component in the Aleutian-Alaska Primary Site through US Participation in Research Cruises of the German R/V Sonne*, 12 months, \$74,434

NSF – Marine Geology & Geophysics Program (July 2015), *Geochemistry of IODP Site 1438 and West Philippine Basin Volcanic Rocks: Constraints on Subduction Initiation and the Early Development of the Izu-Bonin-Mar*, 24 months, \$157,355

NSF – Earth Science Instrumentation & Facilities Program (February 2009), *Upgrade of Electron Microprobe for Use in Geological and Materials Research at the University of South Carolina*, 24 months, \$166,853

NSF – Ocean Sciences Marine Geology & Geophysics Program (September, 2007), *Collaborative Research: Genesis of Primitive, High-Sr Lavas in the Western Aleutians*, 36 months, \$230,176

NSF – Earth Sciences Petrology, Geochemistry & Volcanology Program (December, 2004), *Collaborative Research: Evaluating the Competing Roles of Garnet and Fluid in Controlling U-Th Disequilibria in Aleutian Lavas*, 24 months, \$165,187

NSF – Ocean Sciences Marine Geology & Geophysics Program (October, 2004), *Collaborative Research: Primitive Magmatism and Crustal Genesis in an Island Arc*, 12 months, \$168,241

University of South Carolina – Research and Productive Scholarship Category One Grant (January 2004), *A Preliminary Study of Volcanic Rock Geochemistry at Little Sikin Volcano, Aleutian Islands, Alaska*, 18 months, \$13,732

NSF – Earth Sciences-Petrology & Geochemistry Program (July, 2003), *Collaborative Research: Geochemistry of Ultramafic Xenoliths from the Mantle Wedge of the Kamchatka Arc*, 24 months with the University of Rochester, \$124,679

NSF – Earth Sciences-Instrumentation and Facilities Program (March, 2003), *Acquisition of a Quadrupole ICP Mass Spectrometer for the Department of Geological Sciences and Marine Science Program at the University of South Carolina*, 36 months, \$173,269

NSF – Earth Sciences-Petrology & Geochemistry Program (January, 2003), *Collaborative Research: High Field Strength Element and Hf-Nd Isotope Systematics in Aleutian Lavas: Implications for Conservative Element Behavior in Subduction Zones*, 24 months, \$139,038

NOAA – National Undersea Research Program (September 2002), *Primitive Plutonism in an Island Arc: A Study of Deep Submarine Canyons in the Western Aleutians*, 12 months, \$31,500

NSF – Major Research Instrumentation Program (September, 1999), *Acquisition of Scanning Electron Microscope with X-ray Analysis System for Geology, Biology, and Environmental Studies at Dickinson College: An RUI Request*, 24 months, \$162,428

NSF – Earth Sciences Petrology, Geochemistry & Volcanology Program (January, 1996) *Regional Variability in Aleutian Primitive Magmas and Implications for Processes in the Mantle Wedge: Proposal for an Ion Probe Study*, 24 months, \$75,000

PUBLICATIONS

- Yogodzinski, G.M., Kelemen, P.B., Hoernle, K., Brown, S.T., Bindeman, I., Vervoort, J.D., Sims, K.W.W., Portnyagin, M., Werner, R. (2017). Sr and O isotopes in western Aleutian seafloor lavas: Implications for the source of fluids and trace element character of arc volcanic rocks. *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2017.07.007
- Nielsen, S. G., Yogodzinski, G. M., Prytulak, J., Plank, T., Kay, S. M., Kay, R. W., Blusztajn, J., Owens, J. D., Auro, M., Kading, T. (2016). Tracking along-arc sediment inputs to the Aleutian arc using thallium isotopes. *Geochemica et Cosmochimica Acta*, doi:10.1016/j.gca.2016.03.010
- Arculus, R., Ishizuka, O., Bogus, K. A., Gurnis, M., Hickey-Vargas, R., Aljahdali, M. H., Bandini, A. N., Barth, A. P., Brandl, P. A., Drab, L., do Monte Guerra, R., Hamada, M., Jiang, F., Kanayama, K., Kender, S., Kusano, Y., Li, H., Loudin, L. C., Maffione, M., Marsaglia, K. M., McCarthy, A., Meffre, S., Morris, A., Neuhaus, M., Savov, I. P., Sena, C., Tepley, F. J., van der Land, C., Yogodzinski, G. M., Zhang, Z. (2015). Subduction initiation on an extended Philippine Sea Plate: Izu-Bonin-Mariana Arc inception. *Nature Geoscience*, doi:10.1038/NGEO2515
- Yogodzinski, G. M., Brown, S. T., Kelemen, P. B., Vervoort, J. D., Portnyagin, M., Sims, K. W. W., Hoernle, K., Jicha, B., Werner, R. (2015). The role of subducted basalt in the source of island arc magmas: evidence from seafloor lavas of the western Aleutians. *Journal of Petrology*, doi: 10.1093/petrology/egv006
- Gazel, E., Hayes, J., Hoernle, K., Kelemen, P. B., Everson, E., Holbrook, W. S., Hauff, F., van den Bogaard, P., Vance, E. A., Chu, S., Calvert, A. J., Carr, M. J., Yogodzinski, G. M. (2015). Continental crust generated in oceanic arcs. *Nature Geoscience*, doi:10.1038/NGEO2392
- Chadwick, J., Keller, R., Kamenov, G., Yogodzinski, G. M., Lupton, J. (2014). The Cobb Hotspot: HIMU-DMM mixing and melting controlled by a progressively thinning lithospheric lid *Geochemistry, Geophysics, Geosystems*, doi:10.1002/2014GC005334
- Khanna, T. C., Bizimis, M., Yogodzinski, G. M., Mallick, S. (2014). Hafnium-neodymium isotope systematics of the 2.7 Ga Gadwal greenstone terrane, eastern Dharwar craton, India: Implications for the evolution of the Archean depleted mantle. *Geochemica et Cosmochimica Acta*, doi:10.1016/j.gca.2013.11.024
- Mobley, R. M., Yogodzinski, G. M., Creaser, R. A., Berry, J. M. (2014). Geologic history and timing of mineralization at the Haile Gold Mine, South Carolina. *Economic Geology* 109, 1863-1881.
- Simon, A., Yogodzinski, G. M., Robertson, K., E., S., Selyangin, O., Kiryukhin, A., Mulcahy, S. R., Walker, J. D. (2014). Evolution and genesis of volcanic rocks from Mutnovsky Volcano, Kamchatka, *Journal of Volcanology and Geothermal Research*, doi:10.1016/j.jvolgeores.2014.09.003

- Patiño Douce, A. E., Roden, M. F., Chaumba, J., Fleisher, C., and Yogodzinski, G. M., 2011, Compositional variability of terrestrial mantle apatites, thermodynamic modeling of apatite volatile contents, and the halogen and water budgets of planetary mantles: *Chemical Geology*, doi: 10.1016/j.chemgeo.2011.05.018
- Yogodzinski, G. M., Vervoort, J. D., Brown, S. T., and Gersen, M., 2010, Subduction controls of Hf and Nd isotopes in lavas of the Aleutian island arc: *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2010.09.035
- Zimmer, M. M., Plank, T., Hauri, E. H., Yogodzinski, G. M., Stelling, P., Larsen, J., Singer, B., Jicha, B., Mandeville, C., and Nye, C. J., 2010, The role of water in generating the calc-alkaline trend: New volatile data for Aleutian magmas and a new tholeiitic index: *Journal of Petrology*, doi: :10.1093/petrology/egq062
- Bryant, J. A., Yogodzinski, G. M., and Churikova, T. G., 2010, High-Mg# andesitic lavas of the Shisheisky Complex, Northern Kamchatka: implications of primitive calc-alkaline magmatism: *Contributions to Mineralogy and Petrology*, doi:10.1007/s00410-010-0565-4
- Kelemen, P. B., and Yogodzinski, G. M., 2007, High-magnesian andesite from Mount Shasta: A product of magma mixing and contamination, not a primitive melt: COMMENT: *Geology*, doi: 10.1130/G24099C.1
- Yogodzinski, G. M., and Kelemen, P. B., 2007, Trace elements in clinopyroxenes from Aleutian xenoliths: Implications for primitive subduction magmatism in an island arc: *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2007.02.015
- Bryant, J. A., Yogodzinski, G. M., and Churikova, T., 2007, Evidence of Melt-Mantle Interaction from Ultramafic Xenoliths from Shiveluch Volcano, Kamchatka, *Geochemistry Geophysics Geosystems*, doi:10.1029/2006GC001443
- Bryant, J. A., Yogodzinski, G. M., Hall, M. L., Lewicki, J., and Bailey, D. G., 2006, Geochemical Constraints on the Source of Volcanic Rocks from the Andean Northern Volcanic Zone, Ecuador: *Journal of Petrology*, doi:10.1093/petrology/egl006
- Jicha, B. R., Scholl, D. W., Singer, B. S., Yogodzinski, G. M., and Kay, S. M., 2006, Revised age of Aleutian Island arc formation implies high rate of magma production: *Geology*, doi:10.1130/G22433.1
- Bindeman, I. N., Eiler, J. M., Yogodzinski, G. M., Tatsumi, Y., Stern, C. R., Grove, T. L., Portnyagin, M., Hoernle, K., and Danushevsky, L. V., 2005, Oxygen isotope evidence for slab melting in modern and ancient subduction zones: *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2005.04.014
- Saha, A., Basu, A., Jacobsen, S., Poreda, R., Yin, Q., and Yogodzinski, G. M., 2005, Slab devolatilization and Os and Pb mobility in the mantle wedge of the Kamchatka arc: *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2005.05.018

- Münker, C., Wörner, G., Yogodzinski, G. M., and Churikova, T., 2004, Behaviour of high field strength elements in subduction zones: Constraints from Kamchatka-Aleutian arc lavas: *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2004.05.030
- Kelemen, P. B., Yogodzinski, G. M., and Scholl, D. W., 2003, Along-strike variation in lavas of the Aleutian Island Arc: Implications for the genesis of high Mg# andesite and the continental crust, in Eiler, J., ed., *Inside the Subduction Factory*, Geophysical Monograph 138: Washington D.C., American Geophysical Union, p. 223-276.
- Yogodzinski, G. M., Lees, J. M., Churikova, T. G., Dorendorf, F., Wörner, G., and Volynets, O. N., 2001, Geochemical evidence for the melting of subducting oceanic lithosphere at plate edges: *Nature*, v. 409, p. 500-504.
- Yogodzinski, G. M., and Kelemen, P. B., 1998, Slab melting in the Aleutians: implications of an ion probe study of clinopyroxene in primitive adakite and basalt: *Earth and Planetary Science Letters*, v. 158, p. 53-65.
- Yogodzinski, G. M., Naumann, T. R., Smith, E. I., Bradshaw, T. K., and Walker, J. D., 1996, Evolution of a mafic volcanic field in the central Great Basin, south-central Nevada: *Journal of Geophysical Research*, v. 101, p. 17425-17445.
- Volynets, O. N., Koloskov, A. V., Vinogradov, V. I., Yogodzinski, G. M., Pokrovskii, B. G., and Grigor'ev, V. S., 1995, Strontium and oxygen isotope compositions of Late Cenozoic K-Na alkalic basalts of the within-plate geochemical type in Kamchatka: *Petrology*, v. 3, p. 183-188.
- Yogodzinski, G. M., Kay, R. W., Volynets, O. N., Koloskov, A. V., and Kay, S. M., 1995, Magnesian andesite in the western Aleutian Komandorsky region: Implications for slab melting and processes in the mantle wedge: *Geological Society of America Bulletin*, v. 107, no. 5, p. 505-519.
- Yogodzinski, G. M., Volynets, O. N., Koloskov, A. V., Seliverstov, N. I., and Matvenkov, V. V., 1994, Magnesian andesites and the subduction component in a strongly calc-alkaline series at Piip Volcano, far western Aleutians: *Journal of Petrology*, v. 35, no. 1, p. 163-204.
- Yogodzinski, G. M., Rubenstone, J. L., Kay, S. M., and Kay, R. W., 1993, Magmatic and tectonic development of the western Aleutians: An oceanic arc in a strike-slip setting: *Journal of Geophysical Research*, v. 98, p. 11807-11834.